

**WHAT IS CLAIMED IS:**

1. A current-sense bias circuit for use with a  
magnetoresistive head, comprising:

a voltage biasing portion configured to provide a bias voltage  
across said magnetoresistive head thereby establishing a bias  
current through said magnetoresistive head; and

a current sensing portion coupled to said voltage biasing  
portion and configured to sense a change in said bias current based  
on a resistivity change of said magnetoresistive head.

2. The current-sense bias circuit as recited in Claim 1  
wherein said bias voltage is provided by first and second bipolar  
transistors.

3. The current-sense bias circuit as recited in Claim 2  
wherein said magnetoresistive head interposes first and second  
emitters of said first and second bipolar transistors.

4. The current-sense bias circuit as recited in Claim 2  
wherein a source for said bias voltage interposes first and second  
bases of said first and second bipolar transistors.

5. The current-sense bias circuit as recited in Claim 1  
2 wherein said change in said bias current employs first and second  
3 current sources.

6. The current-sense bias circuit as recited in Claim 1  
2 wherein said change in said bias current provides a proportional  
3 differential voltage.

7. The current-sense bias circuit as recited in Claim 6  
2 wherein first and second resistors are employed to develop said  
3 proportional differential voltage.

8. A method of sensing a current for use with a  
2 magnetoresistive head, comprising:

3 providing a bias voltage across said magnetoresistive head  
4 thereby establishing a bias current through said magnetoresistive  
5 head; and

6 sensing a change in said bias current based on a resistivity  
7 change of said magnetoresistive head.

9. The method of sensing a current as recited in Claim 8  
2 wherein said providing said bias voltage employs first and second  
3 bipolar transistors.

10. The method of sensing a current as recited in Claim 9  
2 wherein said providing said bias voltage employs said  
3 magnetoresistive head interposed first and second emitters of said  
4 first and second bipolar transistors.

11. The method of sensing a current as recited in Claim 9  
2 wherein said providing said bias voltage employs a source for said  
3 bias voltage interposed first and second bases of said first and  
4 second bipolar transistors.

12. The method of sensing a current as recited in Claim 8  
2 wherein said sensing said change in said bias current employs first  
3 and second current sources.

13. The method of sensing a current as recited in Claim 8  
2 wherein said sensing said change in said bias current provides a  
3 proportional differential voltage.

14. The method of sensing a current as recited in Claim 13  
2 wherein said sensing said change in said bias current employs first  
3 and second resistors to develop said proportional differential  
4 voltage.

15. A hard disk drive system, comprising:

2 a motor;  
3 a storage medium coupled to said motor for rotation thereby;  
4 a magnetoresistive read head proximate at least one surface of  
5 said storage medium; and

6 a current-sense bias circuit for use with said  
7 magnetoresistive read head, including:

8 a voltage biasing portion that provides a bias voltage  
9 across said magnetoresistive read head thereby establishing a  
10 bias current through said magnetoresistive read head, and

11 a current sensing portion, coupled to said voltage  
12 biasing portion, that senses a change in said bias current  
13 based on a resistivity change of said magnetoresistive read  
14 head.

16. The hard disk drive system as recited in Claim 15 wherein  
2 said bias voltage is provided by first and second bipolar  
3 transistors.

17. The hard disk drive system as recited in Claim 16 wherein  
2 said magnetoresistive head interposes first and second emitters of  
3 said first and second bipolar transistors.

18. The hard disk drive system as recited in Claim 16 wherein  
2 a source for said bias voltage interposes first and second bases of  
3 said first and second bipolar transistors.

19. The hard disk drive system as recited in Claim 15 wherein  
2 said change in said bias current employs first and second current  
3 sources.

20. The hard disk drive system as recited in Claim 15 wherein  
2 said change in said bias current provides a proportional  
3 differential voltage.

21. The hard disk drive system as recited in Claim 20 wherein  
2 first and second resistors are employed to develop said  
3 proportional differential voltage.